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ABSTRACT

This document presents an introduction to the aims, methods, and activities of the Educational Policy Research Center at Syracuse which was established in 1968 under Title IV of the Elementary and Secondary Education Act. The essential purpose of the Center is to contribute to the development of a capability for assessing educational policy choices within the context of alternative long-range futures. The introductory section of this progress report summarizes the scope of the Center and presents an analysis of the "futures-perspective" approach (an approach which moves backward from future to present, which enables invention as well as projection of alternative futures, and which is distinct from "Utopianism" in that it demands that any vision of the future must include a detailed account of how we could get from here to there). The second section discusses some of the research methods and tools being developed by the Center in relation to its task (the Delphi Method, Cross-Impact Matrix, Simulation-Gaming, etc.). The third section illustrates the Center's approach to future-oriented research by describing and analyzing the possible implications of two of many research efforts currently under way (one dealing with Federal policy for the support of post-secondary education, the other aimed at developing alternative futures for elementary and secondary institutions and for policies directed toward changes in their governance, goals, and methods and content of instruction). (JES)

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Preface

Since its inception in 1968, the Educational Policy Research Center at Syracuse has received hundreds of inquiries from interested persons and organizations about its purposes, its research program, and its methods. The uniqueness of its approach to educational policy analysis, which required an initial major effort in methodological development, and the continuing development of its organization and program have, until recently, mitigated against an attempt to set forth in detail the scope and direction of its activities.

In July of 1969, a conference on *The Public Interest vis a vis Educational R & D* was held at Airlie House, Warrenton, Virginia, under the joint sponsorship of *Saturday Review* and the *Journal of Research and Development in Education* with the cooperation of the U.S. Office of Education. At this conference, Dr. Thomas F. Green, Director of the EPRC—now on sabbatical leave at Harvard University—discussed the EPRC perspective on the future and outlined some of the research underway. Subsequent to that presentation, it was decided that it was both necessary and possible to make available to a wider public a reasonably complete and up-to-date description of the Center's programs and policies.

This essay, *The Educational Policy Research Center at Syracuse: An Unusual Venture,* does not purport to tell the final story. The Center continues to build and modify its program, its method and its organization. Nevertheless, the Center has reached a stage where some of its research will soon be disseminated to the public as a contribution to policy debate and decision on critical educational issues. This research—and indeed all of the activities of the Center—is guided by an approach to the analysis and assessment of alternative educational policies in terms of what we call the *futures-perspective.* For the first time in a consistent and thorough manner, this essay sets forth the meaning, the assumptions, the rationale, the importance, the strengths and the limitations of this unusual and, we believe, important approach to educational policy research. It describes some of the Center's research methods, outlines some of the major policy research underway, and discusses the significance of instructional as well as research tasks for the accomplishment of the Center's objectives.

Warren L. Ziegler
Acting Director
September, 1969

The Educational Policy Research Center at Syracuse: An Unusual Venture

The one thing men most want to know may well be the one thing they are least equipped to learn about—the future. Can we know what life will be like in the distant future? Can it be accurately forecast? Indeed, how can we clearly describe what does not yet exist? Is there more than one possible future? More specifically, what might the future hold for education?

A fundamental task of the Educational Policy Research Center at Syracuse is to address these question in a systematic and useful way. A fundamental premise of the EPRC is that what we do about education today—our policies, our plans, our decisions—will have an impact upon the future of education.

Learning How to Assess the Future

In its focus on educational policy, the EPRC is concerned with both the medium term and the more remote future. But most forecasting techniques are reliable only in the short term, up to at most ten years. The longer we look into the future, the less can we rely upon traditional forecasting techniques to indicate what the future might be like. Indeed, there are no widely accepted techniques for studying society, technology and education up to and beyond the year 2,000.

Research methods for studying the future are new, are not generally understood, and require continuous modification and development. Consequently, the EPRC has undertaken a task for which there are no readily available tools. It has, since its inception in 1968, allocated substantial resources to methodological research and development.

Since the EPRC believes that the future of education in the United States is of concern to many organizations and individuals, it follows that these research techniques—their uses, their limitations—must be widely understood. In short, the EPRC's need to develop its own capability to think about the future—to explicate the various future states of affairs which are more or less possible, plausible, and desirable—is matched by its commitment to transfer this capability to others. As a policy research organization, it is committed to disseminate the methods, as well as the findings, of such research.

The Uncertainty of the Future

Any attempt to systematically assess the possible states of affairs that might exist in the remote future is beset with all the difficulties of human judgment. People's judgments about the future differ, for they hold different expectations about and intentions for the future. They assign different probabilities to the occurrence of future events and social changes. They disagree

about the meanings, the importance, the effects of such changes. Thus, any forecasts about the future, and any estimates about the likely costs and benefits of alternative policies—including those produced by the EPRC—are laden with judgment. No matter how systematic the procedures, no matter how explicit the likely effects of different courses of action, we cannot eliminate the need for human judgment and choice.

But does this mean that the future is all (and only) a matter of opinion? Indeed not. It means that we must be very clear, explicit, and systematic about our speculations and conjectures.

One of the best ways to deal with this inherent uncertainty about futures research is to place the methods of conjecture in the hands of as many different groups as possible. In this manner, it becomes possible to bring into the open for analysis the scope, richness and diversity of speculations about the future. It becomes possible to specify our expectations and intentions, and to analyze the reasons for our differences.

The Assessment of Educational Policy

What is the relevance of future-studies to the assessment of policy? Simply, it is that policy is made to govern the future, not the past. Policy is the making of choices. We do not choose about the past; it has happened, for good or ill. We do choose for the future. In education, the lead time between the formulation of policy and its total effects is very long. Policies formed now and implemented in legislation or in the allocation of resources will impact on education for many years to come—at least for a generation, in some cases, even longer. For example, millions of school children receive their education in facilities built fifty or sixty years ago.

It should be stressed that the EPRC neither does nor intends to make policy. Nor does the EPRC view its purpose as advocating one or another specific educational policy. What we intend is to enhance the ability of policy-makers throughout the educational enterprise to become clearer and more knowledgeable about the consequences of their policy decisions. But the day-to-day involvement with legislation, with administration, with operational pressures makes it difficult for the policy-maker to assume the detached and patient perspective necessary to view the longer term consequences of his decisions. In the typical pressure-cooker setting, it is easy to overlook new or more workable solutions. It is easy to overlook important policy options devised for their longer term effect.

Thus, the chief contribution of the Syracuse EPRC is not to advocate, promulgate, or make policy. It is to make more explicit and usable a consideration of the long-term effects of policy and to raise questions and describe alternatives that, in the normal course of events, might otherwise be ignored. The mere presence of such a Center of study is, in itself, a new addition to the apparatus by which educational policy is formulated.

In addition, the assessment of alternative educational policies means more than the usual definitions of cost and effectiveness. It involves more than estimating the likely success of a specific policy in attaining its objectives at minimum cost. Adequate policy analysis must also pay attention to the latent effects of alternative policies on aspects of society not usually considered as relevant to, or part of, education.

Finally, it should be noted that in assessing alternative educational policies, the Syracuse Center intends to look beyond the traditional goals of the educational system. It is necessary to consider alternative goals. A part of the current crisis in American education is a

decreasing confidence of the American public in the long-established goals of education. For the first time in nearly fifty years, questions are being raised about the human and social purposes for which education is to be understood. The assessment of educational policies can no longer be restricted to the weighing of alternative means to achieve traditional social goals. It also requires the analysis and discussion of alternative sets of goals.

Thus, by taking the long view, it becomes possible and necessary not only to assess educational policy as a means toward certain ends, but also to entertain the desirability and consider the consequences of altogether different ends for education.

Alternative Futures: Predicting, Forecasting and Intervening

A distinctive feature of this kind of policy analysis is the focus on alternative futures—both of education and of the larger social environment. The notion of alternative futures rests on a distinction between predicting, forecasting, and intervention. The EPRC is not in the business of predicting the future. Indeed, we do not believe the future can be predicted, in the scientific sense. Prediction is a claim to be able to know what will happen. We make no such claims.

A more conventional way to deal with the future is to formulate forecasts. A forecast is a projection into the future of the best available information we have at the moment. It is an estimate of what will take place on the assumption that past trends and historical relationships will continue unabated into the future. It assumes there will be no interventions (planned or accidental) to interfere with these trends.

But policy is a form of intervention. Men make policy choices and implement them because they believe they will make a difference. Otherwise, there would be no point in making a choice; there would be no point in planning. Policy-making means intervention—including the decision not to intervene; and policy research is a form of intervention in the process of shaping policy. The EPRC does not accept the idea of a single, pre-determined, unalterable future. There are different futures that may come about depending upon the form and strength of our intervention. There are alternative futures; and while only one will come to pass (when the future becomes the present), we do not *now* know which one it will be. To some extent, depending upon the wisdom and soundness of our choices, a better future may come to pass than an unaltered extrapolation of the past would lead us to expect. That is why systematic speculation about the future must include not only our expectations, but also our intentions. In other words, the EPRC will formulate forecasts in ways useful to an understanding of policy issues, always keeping in mind that such forecasts are estimates of what is likely to take place if nobody intervenes.

Futures-casting and the Futures-Perspective

Typically, when men plan for the future (there is no other kind of planning), they usually extrapolate current trends out into the future. The past, after all, provides the only facts on which to rely. There are no future facts. But this disposition to reason from the past to the future is extraordinarily constraining. It tempts us to think that the future will be a direct extension of the past. A widespread view holds that the future will be a bit more populated, a bit more technologically advanced, a bit more

complex—but essentially like the past. If we think that the future will be like the past, then we are likely to *behave* as though the future will be like the past; and as a consequence, it is more likely that the future *will* be like the past!

There are, of course, continuities in history. It is important to know what they are, for they set limits to what may be possible. But a too complete submission to the seductive and natural tendency to extrapolate from past certainties obscures the possibility (and perhaps the desirability) of a future quite different from the past.

Instead of relying exclusively on a pattern of reasoning from past to future, it may be useful to attempt to reason from the future to the present. We might, for example, attempt to shape policy not in order to accommodate ourselves to a future continuous with the past, but to bring about—to "invent"— a future different from and, in significant ways, discontinuous with the past. This futures-perspective places the explication of alternative futures at the heart of the policy research underway at the Syracuse Center. It also promotes a consideration of alternative goals for policy and alternative goals for education. Instead of being dragged into the future, might we not pull the future back into the present? Instead of formulating policy solely to fit the future, might we not think about inventing the future itself through policy implementation?

This change of perspective is important. It widens the horizon of policy research. It also engenders a consideration of utopian thinking; i.e., inventing alternatives not ordinarily regarded as feasible or attainable. But this futures-perspective which moves backward, as it were, from the future to the present, also sets serious constraints upon utopian thinking. For it requires that any vision of the future, however appealing (or however disastrous), must include a detailed account of how we could get from here to there. In other words, any utopian alternative that is envisioned must be not only future but also attainable, not only possible but also plausible.

We might call this description of possible paths from the present to alternative futures the analysis of futures-history. Utopian conjectures must be accompanied by the specification of the detailed social measures, the economic and demographic parameters, the operationally viable administrative-political apparatus, and the value changes which, taken together, constitute a manageable and plausible path from the present to that future state of affairs. This is a sobering set of limitations to place upon the exercise of imagination. It tends to increase the realism of imagination, to force the specification of policy alternatives, and to promote the step-by-step calculus of interventions—which is planning. We are talking here about a process of casting into the future for many alternatives in such a way as to assess their attainability.

The Syracuse Center is by no means solely concerned with those alternative futures which might be judged beneficial and desirable. For among the possibilities that confront us are those which constitute unmitigated disasters. In developing a detailed vision of such dismal futures, the purpose is not prediction but prevention. The research task is not to specify what is going to happen, but to chart a path from the present to a possible future disaster in order to learn how to intervene in order to avoid or meliorate it.

Forecasting Changes in Values

One of the most difficult yet essential problems in dealing with alternative futures is to forecast changes in values. It may be that American society, perhaps the whole world, is passing through a cultural revolution

which challenges (if it does not nullify) much of conventional wisdom and inherited values. We may be living in a time when common understandings about education, the public interest, modes of participation and patterns of distribution, the conduct of the arts, for example, are undergoing pervasive change. We may be witnessing the birth of a new world paralleling, in significance, the birth of the industrial revolution, or the passage from the Middle Ages to the Renaissance. Such a conjecture—which is the subject of much loose as well as critical thinking—has merit to the extent to which it stimulates the development of fresh possibilities for alternative futures that men are not yet able to understand. If such changes occur, then once again the classical questions of human significance are to be raised, and in as serious a way as they were posed in the eighteenth century for men of Voltaire's time. Little will be left unchanged, and nothing will be left unchallenged, including the future of education.

Consider, for example, the developments in the area of molecular biology and genetic engineering. Possible changes in fundamental value-perspective would seem to have an immediate, as well as a future, significance. The transition in modern science from a concern with the objective world and its "ultimate stuff" to a concern with the genetic character of man himself represents more than an extension of the power of science to observe, experiment, and manipulate. It may well be a transformation which provokes genuine discontinuity in the kinds of questions asked. When the biologist looks into the microscope, does he see an object in the world, or does he see himself? Even the question suggests a transformation from science and technology acting upon the world of nature to a technology acting upon the nature of man himself.

It would seem clear that no systematic effort to think about alternative futures in relation to educational policy can be relevant to this little understood yet pervasive and powerful incidence of change unless it is concerned with the quality of human life, the values that are likely to change, and the ways in which the humanity of man may be preserved or expanded. Therefore, an additional critical objective of the Syracuse Center is to devise ways of forecasting changes in values in relation to changes in ideology, institutions, and education.

Research Methods Used at EPRC

The mission of the Educational Policy Research Center at Syracuse is to develop a capability for thinking about the future in order to assess educational policy in the context of long-range alternative futures. By what means can such a task be carried out?

Within the limits of this paper, it is not possible to adequately describe all methods under development or application at the EPRC. As part of its publication program, the Syracuse Center will issue a set of papers dealing explicitly and in detail with methodological developments, their advantages, applications, and limitations. The Center employs the full range of conventional forecasting methods, which need no description here. It may be useful, however, to comment on the newer methodological tools developed to assess policy trade-offs in terms of alternative futures.

The Delphi Method

One of the troublesome but inescapable features of the future is that it has not occurred. Data available for studies of the past are not applicable for studies of the future. There are no future facts accessible in the present. Thus, much of the information about the future must be produced and assembled out of judgments of experts or other persons relevant to specific research interests. The Delphi procedure is a way of doing this.

Delphi is a method for systematically assembling a set of expert judgments about the likelihood of specific occurrences in the future. In its early development, it was used to bring about a convergence of forecasts, a kind of consensus about future possibilities. But Delphi also has the capacity to elicit reasons for disagreement among experts on a particular forecast. In other words, it can be used not only to bring about consensus on a forecast, but also to assemble the reasoned judgments upon which *alternative* forecasts might be made. Thus, Delphi can be used not only to develop conjectures about the single most likely future, but to set some approximate limits within which reasonable alternative futures might be developed.

Variations in the use and design of a Delphi study are possible, but essentially the process is as follows. In order to find out what might happen in a particular field, an expert in that subject area is queried. To know what is likely to develop in biological research, for example, it is reasonable to ask someone intimately acquainted with that particular area of research. He would be asked two kinds of questions: first, what developments seem likely or conceivable in the next two decades; secondly, when are they likely to occur. But these questions are not limited to one expert. Through Delphi, they are addressed to a panel of experts, since it is probable that their judgments and estimates will differ.

Having collated such judgments, in a crude initial forecast, the results are returned to the panel so that each member has an opportunity to reconsider his original estimates in the light of the judgments of all other members. As might be expected, some members change their original estimates, and others do not. Quite often, the range and distribution of estimates tends to converge, producing a forecast based upon the best available judgments. An interesting feature of such a forecast is not only its degree of consensus, but also the reasons for continued disagreement by the experts.

There are rather obvious questions about the validity of the Delphi method. In the first place, it has been argued that blind experts will produce blind forecasts; biased experts, biased forecasts. Perhaps more important, there are areas of *policy* research for which there are no experts, areas of social concern in which expertise does not exist but which are of grave interest to large numbers of people from diverse socio-economic groups and political viewpoints. Indeed, it is an open question whether Delphi or Delphi-like procedures can be developed for establishing useful forecasts in many areas of social concern. Still, in order to discover the limits and utility of Delphi, to perfect the method, we must attempt to employ it even in areas where it is not easily applicable. Thus, the EPRC, in cooperation with the Institute for the Future at Middletown, Connecticut, is engaged in initial attempts to employ Delphi procedures to produce social as well as technological forecasts.

Because Delphi and other futures-oriented techniques rest, ultimately, on the ways in which people think about the future, the EPRC has undertaken some initial social-psychological research on future cognition.* This research examines the conditions under which people are able to make complex and sophisticated estimates of the occurrence of future events. Current results seem to indicate that experts may not always be the best persons to produce complex and rational judgments about probabilities of future events; that irrespective of their degree of expertise, persons differ in the structure and content of their forecasts because of different cognitive styles and belief structures. Progress in this research may also assist the EPRC to develop different training models for those persons and groups which wish to undertake a study of the future from their own perspective and interest.

Cross-Impact Matrix

The cross-impact matrix is a refinement of some aspects of Delphi and also an enormous extension of the human capacity for judgment. It is based upon the following assumptions. A forecast about the likelihood of a certain event occurring at some point in the future is based, in part, upon a consideration of other developments which might render the event more or less likely. Such a judgment assumes that events impact on one another. The assumption is that the occurrence of specified events will: (1) enhance the likelihood, (2) inhibit the likelihood, or (3) be unrelated to the likelihood of other events occurring. Cross-impact matrix requires us to specify what these relations may be.

Moreover, it is important to consider, in these estimates, not only what events are inhibiting or enhancing, but also what is the strength of these relationships. Given two events that both enhance a third event, are they equally enhancing, or is the relationship stronger between one pair than between the other? Finally, how long a time would it take for the enhancing relationship to be felt—a long time or a short time?

*This work is under the direction of Dr. W. Timothy Weaver of the Syracuse EPRC staff.

Thus, in the logic of thinking about the future, it is possible to identify three logically independent variables that influence the cross-impact of events and therefore influence their likelihood of occurring at a particular point in time. The judgmental probability of an event occurring at a particular time can be defined as a function of its relation to some other event or set of events—its mode of relation, the strength of that relation, and the time lag for that relation to be felt.

These judgments can be incorporated into a matrix in which the impact of each event is assessed in relation to every other event in the matrix. The computer analysis of the matrix then assumes that a random event occurs. On the basis of that assumed occurrence, it modifies the probability of every other event in relation to its estimated cross-impact. The procedure is repeated through many iterations until the modified probabilities at the end of each run begin to stabilize. The result is a set of modified probabilities for a complex set of events occurring by a given target date.

How might the method of cross-impact be used in the generation of scenarios? What is its prospective utility for the work of the Educational Policy Research Center?

Social changes can be defined through events. Concepts such as shifts in power, relocations of authority, increase of secularization, changes of social class, etc., can be defined as events occurring at a particular point in history.

The cross-impact matrix, formulated as a computer transformation, can handle large numbers of events, say a matrix 100 x 100 requiring 29,700 questions to be answered in formulating the matrix. This is a vast extension of the capacity for human judgment, though it does not avoid the difficulties of human judgment. However, bias in the establishment of initial probabilities for events can be checked by arbitrarily shifting the probabilities and checking the consequences of the new results against those in the initial play of the matrix. Bias on some matters may not be significant.

Furthermore, subsets (or groups) of events can be selected to determine which subset, if rendered more probable of occurrence, would have the maximum impact on the other items in the matrix. This would be a crude measure of where to invest social resources, since the implementation of a policy presumably is aimed at rendering some event more likely than it would have been without the policy.

We are not interested, however, simply in the likelihood of certain events occurring. We are also interested in their sequence of occurrence. We are interested in the future history under which the improbable might turn out to happen. Hence, instead of formulating the matrix of events for a particular point in time, we might allow the computer to build its own matrix letting the initial probabilities be those resulting from a run for a specific date, and watch for those points at which the items of low probability become highly probable. This would, in effect, generate a historical scenario for the future.

Moreover, we can formulate events for different sectors or areas of policy concern; e.g., transportation, house construction, land-use, public utilities, etc. Similarily, we can develop matrices for different aspects of of the total educational enterprise; e.g., formal instruction, legal changes, adult education, shifts in career patterns, and changes in the cost and function of education for people of different ages and roles in the society.

For example, we might construct one matrix for the future of the teaching profession, another for shifts in the size of the educational system, another for the political structure

of the school system, another for the size of the corporate industrial role in education. We would then select portions of each to see how these different defined states of affairs might impact on one another. In short, the impact of events in the matrix might be described as the features of a society in motion.

Suppose that we find subsets of events (teacher militancy, changes in the role of city officials, shifts in the locus of education, responses in legislatures and judicial institutions) which have the following properties:

a) They constitute states of affairs which can come into existence at the same time, but
b) if they do, they will be mutually inhibiting.

This might provide clues to points of potential crisis in the educational system. The two conditions indicated above (a and b) constitute one way of defining, within the framework of the cross-impact matrix, what it is that we often mean when we speak of crises.

The applications and potentialities of the cross-impact matrix are not well enough understood, nor has it been used in enough cases to allow any assessment of its long-run utility for the work of the Policy Center. Its value in any specific case will depend, of course, on the value of the judgments put into it, whether the cross-impact of events are carefully assessed and whether the events themselves are precisely formulated. Aside from its extension of the human capacity to relate many different events, the cross-impact matrix has the added advantage of forcing us to specify, with care, the nature and consequences of trends often omitted from forecasts. It may happen, moreover, that when different policies are introduced into a cross-impact study, we will find cases in which certain events of presumed high probability may decline in likelihood no matter what policies are introduced, others will shift in likelihood no matter what else happens, and still others, intended to become more likely through time, will turn out to become less likely because of the impact with other events. These kinds of observations will provide useful insight into the stabilities and changes that might be reasonably expected to occur in some scenario.

The EPRC is employing this technique in producing alternative scenarios on the future of the teaching profession, alternative patterns of school organization and the applicability and adoption of new modes of instruction. This is an ambitious effort based upon carefully generated events derived from a sociological model of changes in the governance of elementary and secondary institutions.

Simulation-Gaming

The applications and utility of simulation and gaming techniques for policy research are not well understood. There are strong *prima facie* grounds, however, for believing that they should have high utility for the work of the EPRC. If education in general can be understood as a process of anticipatory socialization, then surely the assessment of educational policy within the context of long-range alternative futures is an even stronger case of anticipatory socialization. The development of simulation and gaming devices may, in fact, be a most effective way to assess the trade-offs in relation to specific policy choices. Unless it will be possible to bring more rigor and system to the problem of forecasting changes in values, then some mode of simulation and gaming may prove to be the best available attack on that fundamental problem. Finally, since simulation and gaming are techniques not only of research but also of teaching, they fit admirably the twin basic commitments of the Syracuse Center.

Forecasting Value Changes

In general, the development of methods for forecasting changes in values is part of a larger effort to develop better techniques for generating alternative sets of educational goals and evaluating the potential trade-offs between policies directed at different goal mixes.

It is important to distinguish between what is meant by "value," "evaluation," and "values." When we are concerned with forecasting changes in values, we need not be concerned with problems of evaluation at all. By a value we usually mean something like a belief, ideology, or rationalization for a basic belief. In speaking of forecasting values we are, in effect, trying to construct the future history of our beliefs and judgments about such things as privacy, independence, work, jobs, respect for authority, schooling, community, and so forth. In order to assess specific sets of educational policies, it is crucial to analyze the shifting relative importance of such values in alternative futures.

Nicholas Rescher and Kurt Baier have provided an initial schema for dealing with such changes in their volume *Values and the Future* (The Free Press: New York, 1969). They differentiate types of value change as involving such matters as retargeting, rescaling, and redistribution. At the Syracuse Center, we are attempting to utilize and refine these notions in order to link the problem of forecasting value changes more closely to the other ways of describing alternative futures.

Evaluating Policies

As contrasted with forecasting values, there is the quite different matter of evaluating policies. Here the effort is focused on an attempt to use the so-called logic of preference to handle an enormously complex task, such as assessing the future cost and effectiveness of policies as well as judging their capacity to leave the society open to future changes in policy. The superiority of one policy over another may be expressible in terms of its cost, its effectiveness, and its capacity to leave subsequent choices open. A cardinal scale of evalution which would yield a score on the mutual relations between costs and preferences would be an extremely useful addition to our capability to deal with policy choices. This work is in its earliest stages. The problem is a problem not in forecasting values, but in evaluating policies.

There is also the serious matter as to how we can develop complex mixes of educational goals compatible with alternative states of future society. This effort, at the moment, is focusing on the development of several logical typologies of educational targets that policy-makers might need to consider. Educational goals can be classified, for example, according to (1) their different levels of aggregation (e.g., for society or for the local school district), (2) the point of view of the people who adopt them, and (3) the domain of the society to which they are directed (e.g., political, fiscal, social, moral, etc.). It is also possible to differentiate among educational goals in terms of the *degree* to which they can be monitored, the differences in the *ways* in which they can be monitored (whether in process or only at a stage of attainment), and their social function. Some educational goals are serviceable for purposes that have nothing to do with policy formation. They sometimes serve to obscure possible points of conflict rather than to specify targets for attainment. In short, we need to ask whether and under what political conditions it is necessary to specify educational goals for policy direction.

These fairly discrete but related methodological issues are enormously

important to the total program of the Syracuse Center. They represent tough problems. It is not clear what will emerge from these efforts or whether, indeed, the technical difficulties can be surmounted. However, a direct attack is underway on the problems of forecasting values, evaluating policies, and specifying goals of policy.

Other Methodological Interests

There are, of course, other more conventional techniques being employed at the Syracuse Center. For example, it would be folly to ignore the potentialities (and risks) of historical analogy. Renewed attention to the history of education—especially if it can be informed by some social science categories of analysis—is a promising area of investigation. The same can be said of the study of social movements. In general, when the time-perspective encompasses the more remote future, as well as the shorter and medium term, examining changes over long periods in the past will probably provide useful hints and parallels for further exploration about the future.

More interesting, however, is the research being done at the Syracuse Center in the area of curriculum development. It is clear that because of the central importance of instruction in the work of the Policy Center, some attention must be paid to the development of teaching materials on the study of the future, and in particular, on the study of the future of education. But this interest extends much farther. It may in fact be the case that in the future the most natural way to assemble the subject matter from the various academic disciplines into a common curriculum for liberal education will be to assemble that material around the study of the future itself. In other words, in developing curricular materials for the study of the future, we may be engaged in developing a curriculum of the future for liberal education—both at the secondary and undergraduate levels. The germ of this idea will be explored extensively in the next year by some of the Center's staff. The implication of this idea, of course, is that attached to every piece of specific research done at the Syracuse Center is the need to translate the results into teaching or instructional materials.

Some Aspects of the Research Program

It may be helpful in this brief introduction to the EPRC to describe two aspects of the current research program. One effort currently underway deals with Federal policy for the support of post-secondary education. Another major effort is aimed at developing alternative futures for elementary and secondary institutions and for policies directed toward changes in their governance, goals, and the methods and content of instruction.

Post-Secondary Education

In the United States, we have tended to frame policy and to write legislation for pieces of the educational system without careful attention to how the entire system of educational institutions interlocks and without very explicit attention to how policies for one part of the system contradict—or inhibit the achievement of—policies for another part. Almost never do we take into account the longer-term effects of policy. For example, we have produced separate legislation for elementary and secondary education, for early childhood education, for segments of the college and university system—in research, facilities, fellowships, loans, and so forth. But such policies and legislation too seldom consider how different elements in the educational enterprise behave as a system. Part of the Syracuse study of the Federal role in post-secondary education is an attempt to view the post-secondary institutions of education in relation to the elementary and secondary system.

Moreover, policies for post-secondary education are usually discussed independently of the vast array of educational activities which are post-secondary but not carried on in or by the college and university structure. An objective of this study on post-secondary education is to trace the growth and consider alternatives for post-secondary education outside the domain of formal, higher education.

The EPRC is currently engaged in examining the behavior of student enrollments in higher education over the past one hundred years.* This research, not yet completed, has produced a series of ratios and a series of long-term trends related to those ratios. The relation between high-school graduates and eighteen-year olds in the population is reaching its upper limit. It is also clear that the time required for completions in high schools has changed little since 1880. Moreover, the ratio between total college enrollment and high-school graduates has hardly varied since 1910 except for major upheavals due to war and to the major depression of the Thirties. These and other relationships between the college and university system and the secondary system tend to show that although changes have occurred in the quality of the B.A. degree, it can be expected that—without intervention—the system will continue to operate so as to maintain a relatively constant relation between enrollments in colleges and universities and completions in the post-secondary system.

*This study is under the direction of James Byrnes, Senior Research Fellow on the Center staff.

The *total* number of post-secondary degrees— B.A. level and advanced— has, of course, changed somewhat between the period 1920 to 1945 and the period 1954 to 1968. But that change in the ratio between post-secondary degrees and high-school diplomas appears to be due largely to the shift toward a higher percentage of advanced degrees. The proportion of advanced degrees has more than doubled from 9% in 1920 to 21% in 1968. This also may account partly for the increase in expenditures per credit hour of instruction since 1920, which has moved from approximately $20 in 1920 to $53 in 1968 (constant 1967-68 dollars).

In general, this investigation points toward the thesis that the growth in the proportion of the population with post-secondary degrees is about to stabilize unless *basic* changes occur in the character of higher education and especially in the meaning of the Bachelor's Degree. It is true, of course, that certain ratios being studied in this research might be altered by public policy. Changes, for example, might be wrought in the relation between enrollment and completions in the college and university system. Depending on what relationships are modified, alternative futures will begin to emerge.

Two particularly important points of emphasis are beginning to emerge from this aspect of the research. In the first place, long-term trends over the past fifty years or more seem to indicate that certain traditional policy goals for the educational system may be near a point of attainment. If it has been a primary aim of American policy to raise the level of educational attainment for the population to that of the high school, then that objective may be largely attained by 1975. It will then be necesary to introduce fresh policy goals for education by the time of the nation's bi-centennial. These new goals can have far-reaching effects upon the character of higher education and the total available educational efforts for those who graduate from high school, but not from college.

Alternative futures again will result, depending upon what policy goals are implemented. What will be the policy goals for a post-industrial educational system? This question may become urgent sooner than many expect.

Equally significant, perhaps, are the policy alternatives that begin to emerge and the alternative futures that come into focus when this investigation of the college and university system is joined with another study being conducted on the size, composition, and growth of what Bertrand Gross has called the "learning force."* This study is an investigation of the *educating* system of American society as distinguished from the educational system. It is a study of post-secondary educational activities carried on outside the college and university system. Current estimates are that in the United States by 1970 the number of people receiving formal instruction in educational programs within the traditional system of schools, colleges, and universities will be less than the number receiving formal instruction in programs outside that institutional system. In short, as the society moves into the future, will the college and university system continue as the major component of post-secondary education?

This research will examine alternative futures in which the function of post-secondary education, its temporal occurrence in the lives of people, and its reach throughout the population is greatly expanded, even though the proportion of the population receiving B.A. degrees and above may stabilize. It indicates alternative futures very different from the present, leading to different goals and purposes for the institutions of our traditional educational system, and suggesting new innovations in the Federal role in post-secondary education.

*This study is under the direction of Stanley Moses, Research Fellow on the Center staff.

Elementary and Secondary Education

It can hardly be doubted that much of the crisis in American education stems from shifts in the character of the public contending for influence on the conduct of elementary and secondary schools. A number of factors compound this crisis. Students, parents, political officials and legislative bodies, as well as teachers' associations, all seek to exercise influence on the schools with an increasing intensity of effort. In addition, there is little doubt that the development of new instructional systems (individualized instruction, computer assisted instruction, etc.) and the new curricula have also raised questions within the profession about the redefinition of teaching roles within the schools. The escalating demand for sophisticated skills in a technological society has tended to render education more decisive in the lives of people, and therefore to increase still further the demand for education and the seriousness of contention over its control. At the same time, the effort to provide more adequate education for ethnic minorities has lent increasing importance to issues relating to the control of education. All of these factors add up to a crisis, not only of confidence in the educational system, but a crisis in the future of the profession itself and in the legal and institutional arrangements by which we seek to carry on education.

On the other hand, an on-going system of schools exists. They are manned and their conduct is controlled through many long-standing arrangements. That system of elementary and secondary education is not likely to go away. There are, no doubt, certain underlying social processes at work which will continue to operate in distributing power and accountability through such a complex social system. It should be possible to develop forecasts about the future of elementary and secondary education in this country if we can develop an empirically-based analytic model of the educational system which accounts for fluctuations and changes in the distribution of power among publics to whom the schools are accountable and among roles within the controlling system itself. These propositions underlie the effort to study alternative policies at the elementary and secondary level and to identify points of potential conflict within them.

Other Research Efforts

In addition to continuing research on methodological techniques, on forecasting value-changes, and on developing procedures for the evaluation of future alternative policies and goal mixes, on post-secondary, elementary and secondary education, and on ways of disseminating and providing instruction on the futures-perspective, a number of other research efforts are underway or near completion. These include the development of alternative economic futures which should facilitate specific and systematic conjectures about the relationship of the general economy to costs and demands for education; the analysis of education as an emerging macro-system, which may make possible a kind of systems-forecasting; a status report, including a partially annotated bibliography (over 3,000 items) on educational planning and implementation world-wide; and the development of a framework for analyzing problems of long-term planning for alternative futures.

Each of these studies, indeed the entire research program of the Center, has been framed to contribute to the development of a capability for assessing educational policy choices within the context of alternative long-range futures.

Single copies of this publication are available on request without charge.

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